

AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

1. (Currently amended) A method of using a base station almanac for position determination in a wireless terrestrial communication network, comprising:
  - storing, for the base station almanac, a plurality of records for a plurality of earthbound transmitting entities in the wireless terrestrial communication network, wherein each of the plurality of records supports at least one protocol for position determination, and wherein the base station almanac supports a plurality of protocols for position determination; and
  - performing position determination for each of the plurality of protocols based on records supporting the protocol.
2. (Original) The method of claim 1, wherein the plurality of protocols include IS-801.
3. (Original) The method of claim 1, wherein the plurality of protocols include J-STD-36.
4. (Original) The method of claim 1, wherein the plurality of protocols include Global System for Mobile Communications (GSM) 04.31 Radio Resource LCS Protocol (RRLP).
5. (Currently amended) A position determination system comprising:
  - a storage unit for storing a base station almanac with a plurality of records for a plurality of earthbound transmitting entities in a wireless terrestrial communication network, wherein each of the plurality of records supports at least one protocol for position determination, and wherein the base station almanac supports a plurality of protocols for position determination; and
  - a controller operative to perform position determination for each of the plurality of protocols based on records supporting the protocol.
6. (Currently amended) A position determination apparatus, comprising:

means for storing a base station almanac with a plurality of records for a plurality of earthbound transmitting entities in a wireless terrestrial communication network, wherein each of the plurality of records supports at least one protocol for position determination, and wherein the base station almanac supports a plurality of protocols for position determination; and

means for performing position determination for each of the plurality of protocols based on records supporting the protocol.

7. (Withdrawn) A method of using a base station almanac for position determination in a wireless communication network, comprising:

storing a protocol type value for each of a plurality of records of the base station almanac, the protocol type value indicating at least one protocol for position determination supported by the record;

storing at least one sector identifier for each of the plurality of records, one sector identifier for each of the at least one protocol supported by the record, each sector identifier being defined based on the associated protocol; and

selecting a record for use for position determination based on the at least one sector identifier stored for the record.

8. (Withdrawn) The method of claim 7, wherein the base station almanac supports a plurality of protocols for position determination, and wherein the at least one protocol supported by each record is among the plurality of protocols.

9. (Withdrawn) The method of claim 8, wherein the plurality of protocols include IS-801, and wherein a sector identifier for IS-801 comprises a system identifier (SID), a network identifier (NID), and a base station identifier (baseID).

10. (Withdrawn) The method of claim 8, wherein the plurality of protocols include J-STD-36, and wherein a sector identifier for J-STD-36 comprises a market identifier (MarketID), a switch number (SwitchNumber), and a base station identifier (baseID).

11. (Withdrawn) The method of claim 8, wherein the plurality of protocols include Global System for Mobile Communications (GSM) 04.31 Radio Resource LCS

Protocol (RRLP), and wherein a sector identifier for GSM comprises a mobile country code (MCC), a mobile network code (MNC), a location area code (LAC), and a cell identifier (CI).

12. (Withdrawn) The method of claim 8, wherein the plurality of protocols include Universal Mobile Telecommunications System (UMTS), and wherein a sector identifier for UMTS comprises a location area code (LAC), a mobile network code (MNC), a radio network controller identifier (RNC-ID), and a cell identifier (CI).

13. (Withdrawn) A position determination system comprising:

a storage unit for storing a base station almanac with a plurality of records for a plurality of transmitting entities in a wireless communication network, wherein each of the plurality of records includes a protocol type value indicating at least one protocol for position determination supported by the record, wherein each record further includes at least one sector identifier, one sector identifier for each of the at least one protocol supported by the record, each sector identifier being defined based on the associated protocol; and

a controller operative to select a record for use for position determination based on the at least one sector identifier stored for the record.

14. (Withdrawn) A method of using a base station almanac for position determination in a wireless communication network, comprising:

storing, in a single record of the base station almanac, at least two sector identifiers for a transmitting entity associated with the record, wherein each of the at least two sector identifiers is defined based on a respective protocol for position determination supported by the record; and

selecting the record for use for position determination based on the at least two sector identifiers stored for the record.

15. (Withdrawn) The method of claim 14, wherein the record includes a first sector identifier defined based on IS-801.

16. (Withdrawn) The method of claim 15, wherein the record further includes a second sector identifier defined based on J-STD-36.

17. (Withdrawn) A method of using a base station almanac for position determination in a wireless communication network, comprising:

storing, in a single record of the base station almanac, at least two data values for an attribute of a transmitting entity, wherein each of the at least two data values is stored in a respective instance or part of a field in the record for the attribute of the transmitting entity; and

using the at least two data values in the field of the record for position determination for wireless terminals in the wireless communication network.

18. (Withdrawn) The method of claim 17, wherein the at least two data values are for at least two identifiers for the transmitting entity.

19. (Withdrawn) The method of claim 17, wherein the at least two data values are for a function used to estimate coverage area of the transmitting entity.

20. (Withdrawn) The method of claim 17, wherein the at least two data values are for at least two maximum antenna ranges (MARs) for the transmitting entity.

21. (Withdrawn) The method of claim 17, wherein the at least two data values are for at least two frequencies used by the transmitting entity.

22. (Withdrawn) The method of claim 21, wherein the record further includes a calibration value for each of the at least two frequencies.

23. (Withdrawn) The method of claim 17, further comprising:  
storing, in a single entry of the single record, attributes for the at least two data values.

24. (Withdrawn) A method of using a base station almanac for position determination in a wireless communication network, comprising:

storing, in a single record of the base station almanac, at least two maximum antenna ranges (MARs) for a transmitting entity associated with the record; and

using the at least two MARs for position determination for wireless terminals in the wireless communication network.

25. (Withdrawn) The method of claim 24, wherein each of the at least two MARs is associated with a respective reference power level, and wherein each MAR is indicative of a geographic area within which a wireless terminal is expected to be located if received signal strength measured by the wireless terminal for the transmitting entity meets or exceeds the reference power level associated with the MAR.

26. (Withdrawn) The method of claim 24, further comprising:  
obtaining an estimated MAR based on the at least two MARs, wherein the estimated MAR is used for position determination.

27. (Withdrawn) The method of claim 26, further comprising:  
selecting one of the at least two MARs based on received signal strength measured by a wireless terminal for the transmitting entity, wherein the estimated MAR is equal to the selected MAR.

28. (Withdrawn) The method of claim 26, wherein the estimated MAR is obtained by interpolating between the at least two MARs.

29. (Withdrawn) The method of claim 26, wherein the estimated MAR is obtained by curve fitting the at least two MARs.

30. (Withdrawn) The method of claim 26, further comprising:  
estimating a coverage area for the transmitting entity based on the estimated MAR.

31. (Withdrawn) The method of claim 26, further comprising:  
deriving a position estimate for the wireless terminal based on the estimated MAR.

32. (Withdrawn) The method of claim 26, further comprising:

providing assistance data for the wireless terminal based on the estimated MAR, wherein the assistance data is used by the wireless terminal to search for and process satellite signals.

33. (Withdrawn) A position determination system comprising:  
a storage unit for storing, in a single record of the base station almanac, at least two maximum antenna ranges (MARs) for a transmitting entity associated with the record; and  
a controller operative to use the at least two MARs for position determination for wireless terminals in a wireless communication network.

34. (Withdrawn) A position determination apparatus, comprising:  
means for storing, in a single record of the base station almanac, at least two maximum antenna ranges (MARs) for a transmitting entity associated with the record; and  
means for using the at least two MARs for position determination for wireless terminals in the wireless communication network.

35. (Withdrawn) A method of using a base station almanac for position determination in a wireless communication network, comprising:  
storing an enclosed space indicator for each of a plurality of records of the base station almanac, wherein the enclosed space indicator for each record indicates whether a transmitting entity described by the record is associated with an enclosed environment; and  
using enclosed space indicators for the plurality of records for position determination for wireless terminals in a wireless communication network.

36. (Withdrawn) The method of claim 35, further comprising:  
identifying a transmitting entity for a signal received by a wireless terminal;  
retrieving a record in the base station almanac for the transmitting entity; and  
performing position determination for the wireless terminal using the enclosed space indicator for the retrieved record.

37. (Withdrawn) The method of claim 36, further comprising:

omitting a search for satellite signals if the enclosed space indicator for the retrieved record indicates an enclosed environment for the identified transmitting entity.

38. (Withdrawn) The method of claim 36, further comprising:  
reporting the wireless terminal to be in an enclosed environment if indicated by the enclosed space indicator for the retrieved record.

39. (Withdrawn) A position determination system comprising:  
a storage unit for storing an enclosed space indicator for each of a plurality of records of the base station almanac, wherein the enclosed space indicator for each record indicates whether a transmitting entity described by the record is associated with an enclosed environment; and  
a controller operative to use enclosed space indicators for the plurality of records for position determination for wireless terminals in a wireless communication network.

40. (Withdrawn) A method of using a base station almanac for position determination in a wireless communication network, comprising:  
storing a repeater flag for each of a plurality of records of the base station almanac, wherein the repeater flag for each record indicates whether the record describes a coverage area for a transmitting entity or a generalized coverage area for a plurality of transmitting entities; and  
using repeater flags for the plurality of records for position determination for wireless terminals in the wireless communication network.

41 (Withdrawn) The method of claim 40, where the plurality of transmitting entities comprise one transmitting entity and a plurality of repeaters of the one transmitting entity.

42 (Withdrawn) The method of claim 40, where the plurality of transmitting entities comprise a distributed antenna system.

43. (Withdrawn) The method of claim 40, where the plurality of transmitting entities comprise a plurality of repeaters of a specific transmitting entity, but not the specific transmitting entity.

44. (Withdrawn) The method of claim 40, where the transmitting entity is a repeater of another transmitting entity.

45. (Withdrawn) The method of claim 40, further comprising:  
storing, for each record describing the generalized coverage area for a transmitting entity and repeaters of the transmitting entity, a watermark identifier for each of the repeaters of the transmitting entity, wherein the watermark identifier for each repeater identifies a physical property of a watermark used by the repeater.

46. (Withdrawn) The method of claim 45, wherein the watermark ID for each repeater identifies a frequency used by the repeater to modulate a signal transmitted by the repeater.

47. (Withdrawn) The method of claim 40, further comprising:  
storing, for each record describing the generalized coverage area for a transmitting entity and repeaters of the transmitting entity, a repeater type for each of the repeaters of the transmitting entity, wherein the repeater type for each repeater indicates whether the repeater is coupled to the transmitting entity via a wireline link or a wireless link.

48. (Withdrawn) A position determination system comprising:  
a storage unit for storing a repeater flag for each of a plurality of records of the base station almanac, wherein the repeater flag for each record indicates whether the record describes a coverage area for a transmitting entity or a generalized coverage area for the transmitting entity and repeaters of the transmitting entity; and  
a controller operative to use repeater flags for the plurality of records for position determination for wireless terminals in a wireless communication network.

49. (New) The method of claim 1, wherein the performing position determination for each of the plurality of protocols based on records supporting the protocol comprises

receiving identity of at least one earthbound transmitting entity and a protocol type indicating one of the plurality of protocols,

retrieving from the base station almanac at least one record for the at least one earthbound transmitting entity and supporting the protocol type, and

performing position determination for a wireless terminal with the at least one record for the at least one earthbound transmitting entity.

50. (New) The method of claim 49, wherein the performing position determination for the wireless terminal comprises

computing an initial position estimate for the wireless terminal based on the at least one record for the at least one earthbound transmitting entity,

obtaining satellite assistance data for the wireless terminal based on the initial position estimate, and

providing the satellite assistance data to the wireless terminal.

51. (New) The method of claim 49, wherein the performing position determination for the wireless terminal comprises

receiving measurements for the wireless terminal, and

computing a position estimate for the wireless terminal based on the measurements and the at least one record for the at least one earthbound transmitting entity.

52. (New) The position determination system of claim 5, wherein the controller is operative to receive identity of at least one earthbound transmitting entity and a protocol type indicating one of the plurality of protocols, to retrieve from the base station almanac at least one record for the at least one earthbound transmitting entity and supporting the protocol type, and to perform position determination for a wireless terminal with the at least one record for the at least one earthbound transmitting entity.

53. (New) The position determination system of claim 52, wherein the controller is operative to compute an initial position estimate for the wireless terminal

based on the at least one record for the at least one earthbound transmitting entity, to obtain satellite assistance data for the wireless terminal based on the initial position estimate, and to provide the satellite assistance data to the wireless terminal.

54. (New) The position determination system of claim 52, wherein the controller is operative to receive measurements for the wireless terminal, and to compute a position estimate for the wireless terminal based on the measurements and the at least one record for the at least one earthbound transmitting entity.

55. (New) The position determination system of claim 5, wherein the plurality of protocols for position determination include JS-801, J-STD-36, Global System for Mobile Communications (GSM) 04.31 Radio Resource LCS Protocol (RRLP), or a combination thereof.

56. (New) The position determination system of claim 5, wherein the plurality of protocols for position determination are associated with different information for at least one field of the plurality of records.

57. (New) The position determination system of claim 5, wherein the plurality of protocols for position determination are associated with different types of identifier for the plurality of earthbound transmitting entities.

58. (New) The position determination system of claim 5, wherein the plurality of earthbound transmitting entities comprise a plurality of base stations.

59. (New) The position determination system of claim 5, wherein the plurality of earthbound transmitting entities comprise at least one repeater.

60. (New) The position determination apparatus of claim 6, wherein the means for performing position determination for each of the plurality of protocols based on records supporting the protocol comprises  
means for receiving identity of at least one earthbound transmitting entity and a protocol type indicating one of the plurality of protocols,

means for retrieving from the base station almanac at least one record for the at least one earthbound transmitting entity and supporting the protocol type, and  
means for performing position determination for a wireless terminal with the at least one record for the at least one earthbound transmitting entity.

61. (New) The position determination apparatus of claim 60, wherein the means for performing position determination for the wireless terminal comprises  
means for computing an initial position estimate for the wireless terminal based on the at least one record for the at least one earthbound transmitting entity,  
means for obtaining satellite assistance data for the wireless terminal based on the initial position estimate, and  
means for providing the satellite assistance data to the wireless terminal.

62. (New) The position determination apparatus of claim 60, wherein the means for performing position determination for the wireless terminal comprises  
means for receiving measurements for the wireless terminal, and  
means for computing a position estimate for the wireless terminal based on the measurements and the at least one record for the at least one earthbound transmitting entity.

63. (New) The position determination apparatus of claim 6, wherein the plurality of protocols for position determination include IS-801, I-STD-36, Global System for Mobile Communications (GSM) 04.31 Radio Resource LCS Protocol (RRLP), or a combination thereof.